

CLAIMS

I claim:

1. An electromagnetic pulse protected fuel cell power system comprising:

a fuel cell for converting fuel into electrical energy;

an electronic fuel cell controller; and

5 an enclosure for containing said fuel cell and controller, where the enclosure is formed from one or more materials which dissipate or reflect electromagnetic pulse energy, such that the pulse strength within the enclosure is below a damage threshold of electronic devices enclosed within the enclosure.

2. A fuel cell power system as claimed in claim 1, further including one or more electrical lines entering or exiting the enclosure, said one or more electrical lines contain voltage or current spike suppression means sufficient to prevent damage to the electronic devices contained within the enclosure.

3. A fuel cell power system as claimed in claim 1, further including one or more openings in the enclosure, and where said one or more openings each include means to reflect or dissipate electromagnetic pulse energy.

4. A fuel cell power system as claimed in claim 3 where said means to reflect or dissipate electromagnetic pulse energy comprises an electromagnetic pulse attenuating grid.

5. A fuel cell power system as claimed in claim 3 where said means to reflect or dissipate electromagnetic pulse energy comprises an electromagnetic pulse attenuating honeycomb cover.

6. A fuel cell power system as claimed in claim 1, further including one or more viewing ports in the enclosure, and where said one or more viewing ports include means to reflect or dissipate electromagnetic pulse energy.

7. A fuel cell power system as claimed in claim 6, where said means to reflect or dissipate electromagnetic pulse energy comprises a transparent conductive material coated onto the one or more viewing ports.

8. An electromagnetic pulse protected, electronically controlled fuel processor for producing hydrogen from a hydrogen-containing fuel contained in an enclosure, where the enclosure is formed from one or more materials which dissipate or reflect electromagnetic pulse energy, such that the pulse strength within the enclosure is below a damage threshold of fuel processor control electronic devices enclosed within the enclosure.

9. A fuel processor as claimed in claim 8, further including one or more electrical lines entering or exiting the enclosure, said one or more electrical lines contain voltage or current spike suppression means sufficient to prevent damage to the electronic devices contained within the enclosure.

10. A fuel processor as claimed in claim 9, further including one or more openings in the enclosure, and where said one or more openings each include means to reflect or dissipate electromagnetic pulse energy.

11. A fuel processor as claimed in claim 10, where said means to reflect or dissipate electromagnetic pulse energy comprises an electromagnetic pulse attenuating grid.

12. A fuel processor as claimed in claim 10, where said means to reflect or dissipate electromagnetic pulse energy comprises an electromagnetic pulse attenuating honeycomb cover.

13. A fuel processor as claimed in claim 8, further including one or more viewing ports in the enclosure, and where said one or more viewing ports include means to reflect or dissipate electromagnetic pulse energy.

14. A fuel processor as claimed in claim 13, where said means to reflect or dissipate electromagnetic pulse energy comprises a transparent conductive material coated onto the one or more viewing ports.

15. An electromagnetic pulse protected fuel cell power system comprising:

- a fuel processor for producing hydrogen from a hydrogen rich fuel;
- a fuel cell for converting hydrogen into electrical energy;

5 a power conditioning circuit to control or modify output power of the fuel
cell;
 an electronic controller for controlling the fuel cell or fuel processor; and
 an enclosure for containing the fuel processor, fuel cell, power conditioning
circuit and electronic controller, where the enclosure is formed from one or more
10 materials which dissipate or reflect electromagnetic pulse energy, such that the
pulse strength within the enclosure is below a damage threshold of electronic
devices enclosed within the enclosure.

16. A fuel cell power system as claimed in claim 15, further including
one or more electrical lines entering or exiting the enclosure, said one or more
electrical lines contain voltage or current spike suppression means sufficient to
prevent damage to the electronic devices contained within the enclosure.

17. A fuel cell power system as claimed in claim 15, further including
one or more openings in the enclosure, and where said one or more openings each
include means to reflect or dissipate electromagnetic pulse energy.

18. A fuel cell power system as claimed in claim 17 where said means to
reflect or dissipate electromagnetic pulse energy comprises an electromagnetic
pulse attenuating grid.

19. A fuel cell power system as claimed in claim 17 where said means to
reflect or dissipate electromagnetic pulse energy comprises an electromagnetic
pulse attenuating honeycomb cover.

20. A fuel cell power system as claimed in claim 15, further including
one or more viewing ports in the enclosure, and where said one or more viewing
ports include means to reflect or dissipate electromagnetic pulse energy.

21. A fuel cell power system as claimed in claim 20, where said means to
reflect or dissipate electromagnetic pulse energy comprises a transparent
conductive material coated onto the one or more viewing ports.

22. A method of suppressing an electromagnetic pulse entering an
enclosure containing an electronically controlled fuel processor for producing
hydrogen from a hydrogen-containing fuel, comprising at least one of:

- configuring one or more openings into the enclosure such that
- 5 electromagnetic pulses are reflected or dissipated;
- coupling an electrical line entering or leaving the enclosure with a voltage or current surge dissipation device such that the electromagnetic pulse strength is below a damage threshold of fuel processor control electronic devices enclosed within the enclosure; and
- 10 configuring one or more viewing ports into the enclosure such that electromagnetic pulses are reflected or dissipated.
23. A method of suppressing an electromagnetic pulse entering an enclosure containing a fuel cell power system, comprising:
- configuring one or more openings into the enclosure such that electromagnetic pulses are reflected or dissipated;
- 5 coupling an electrical line entering or leaving the enclosure with a voltage or current surge dissipation device such that the electromagnetic pulse strength is below a damage threshold of electronic devices enclosed within the enclosure; and
- configuring one or more viewing ports into the enclosure such that electromagnetic pulses are reflected or dissipated.